

**PSOMAS**

Balancing the Natural and Built Environment



# Public Meeting

February 10, 2010

## Kolb Rd.: Connection to Sabino Canyon

COT Project No. SR8A



**CITY OF  
TUCSON**





# KOLB RD.: CONNECTION TO SABINO CANYON



## Welcome and Introductions

- Michael Graham  
City of Tucson, Project Manager



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## Public Participation Update and Meeting Format

- Jan Gordley  
Gordley Design Group, Public Involvement



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## Public Involvement Update

- Public Involvement Plan
- Individual Contact
- Task Force
  - Formed by Mayor and Council
  - Nearly 80 applications received
  - 9 members selected
  - Held 2 meetings to date



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## Public Meeting – September 10, 2009

- 136 attended
- 32 comment forms
  - Summary on project website



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## Meeting Format

- Presentation
- Question Cards
- Discussions at Displays
- Comment Forms



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## Project Update

- Kevin Thornton, PE  
Psomas, Project Manager
- Brad Johnston, PG  
SCS, Landfill Development Specialist
- Alejandro Angel, PhD, PE  
Psomas, Traffic Engineer
- Scott Stapp  
HDR, Environmental Planner

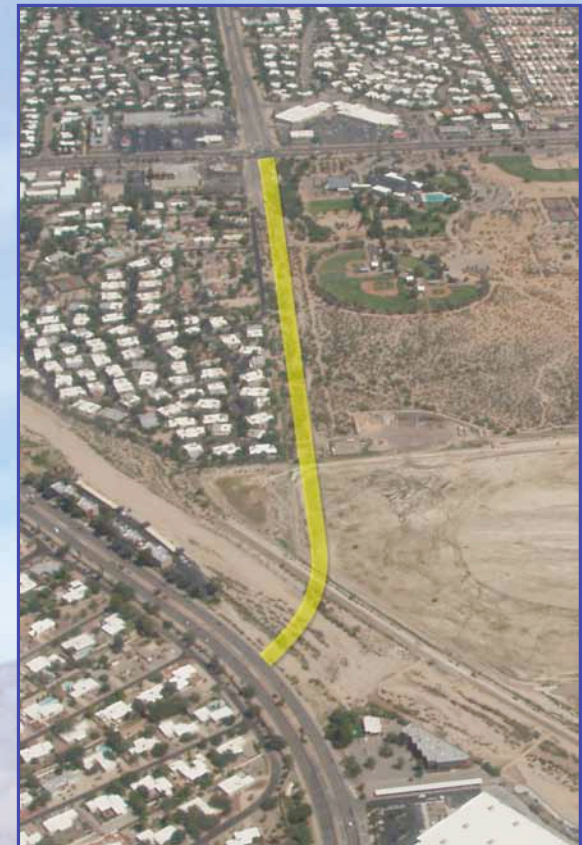


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## Project Description – Kevin Thornton

- Sabino Canyon/Tanque Verde to Kolb
- \$21.9M
  - RTA Funding - \$10.1M
  - Federal Funding - \$11.8M
- 4-lane Roadway
- Includes:
  - Bike Lanes and Sidewalks
  - Roadway over Landfill
  - Bridge over the Pantano Wash
- Can Include:
  - Landscaping
  - Street Lighting
  - Public Art





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## Project Status – Kevin Thornton

- Planning Phase
  - Design Concept Report
  - Environmental Assessment
- Current Activities
  - Obtaining Public Input
  - Mullins Landfill-Roadway Support Complete
  - Initial Traffic Report Complete
  - Initial Drainage Report Complete





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## Landfill Status – Brad Johnston

- ADEQ granted closure in 2007
- Soil cap at least three feet thick
- Landfill gas being collected and treated
- Landfill gas monitoring every month
- Groundwater monitoring every 6 months
- Site inspection every 6 months



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## Landfill Settlement Mitigation Options



Compaction by surcharging

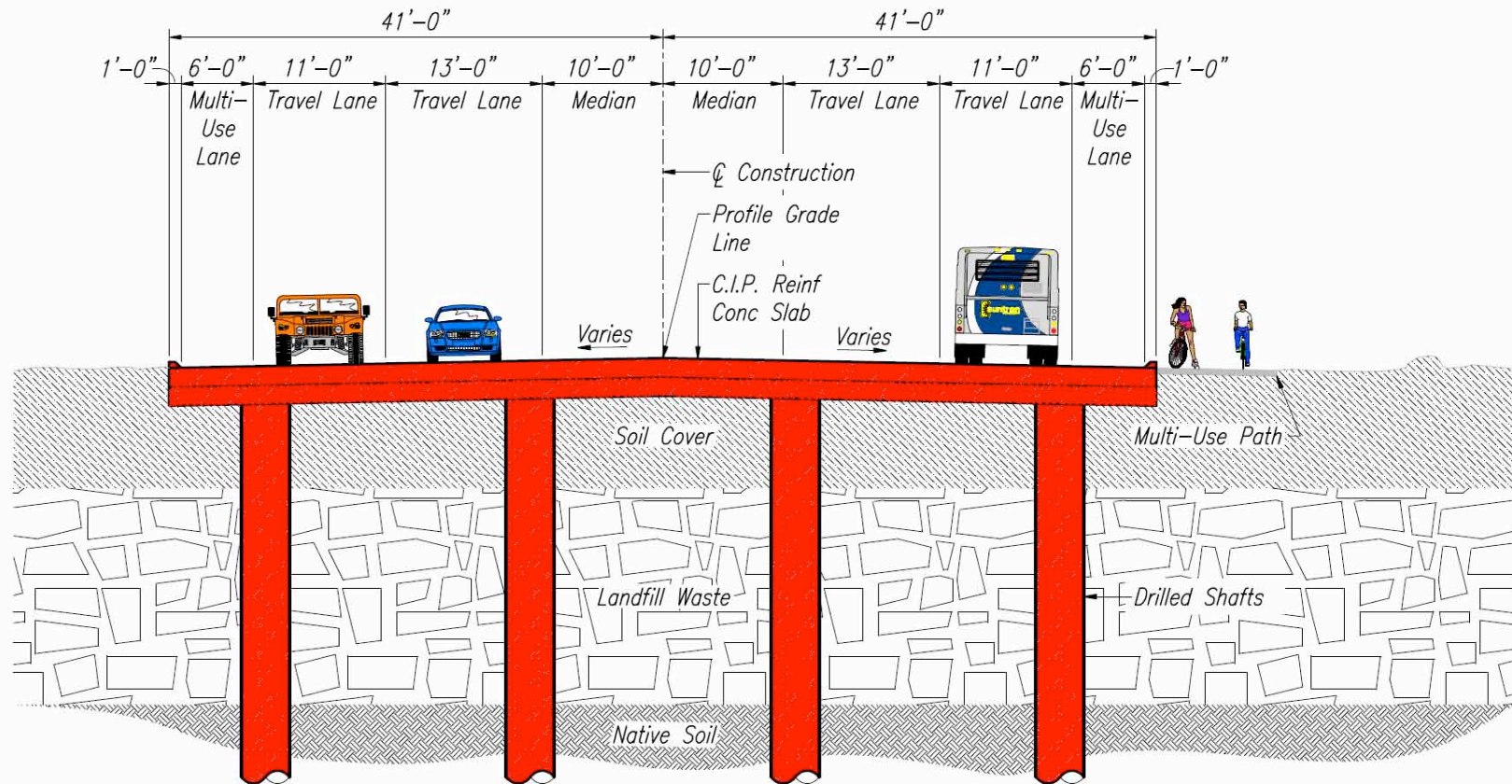


Dynamic compaction



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## Landfill Settlement Mitigation Options



**TYP BRIDGE SECTION AT PIER**

Scale 1/8" = 1'-0"

09153BS1

1



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## Landfill Construction

- ADEQ will be notified of proposed activities
- Minimal changes to landfill due to this project
- Minimal contact with waste during construction
- Air monitoring during excavation or drilling



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## Traffic Engineering – Alejandro Angel

- Current operations and safety
- 2030 without the project
- 2030 with the project

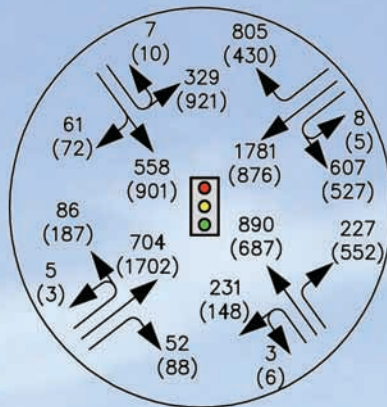




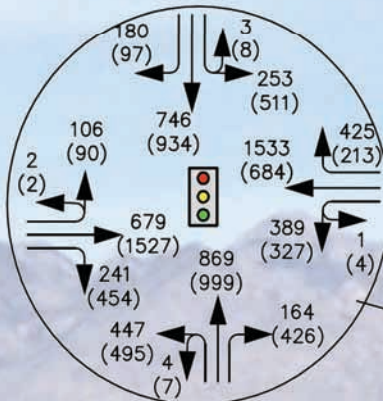
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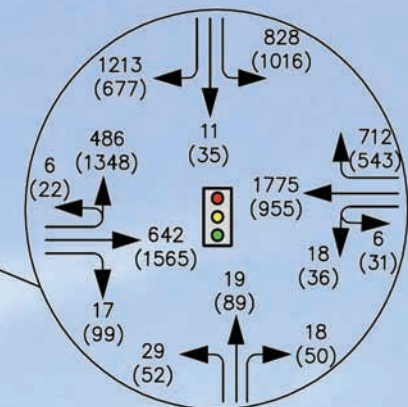
## Existing Traffic Volumes



TANQUE VERDE -  
GRANT/KOLB



SPEEDWAY -  
KOLB



TANQUE VERDE -  
SABINO CANYON

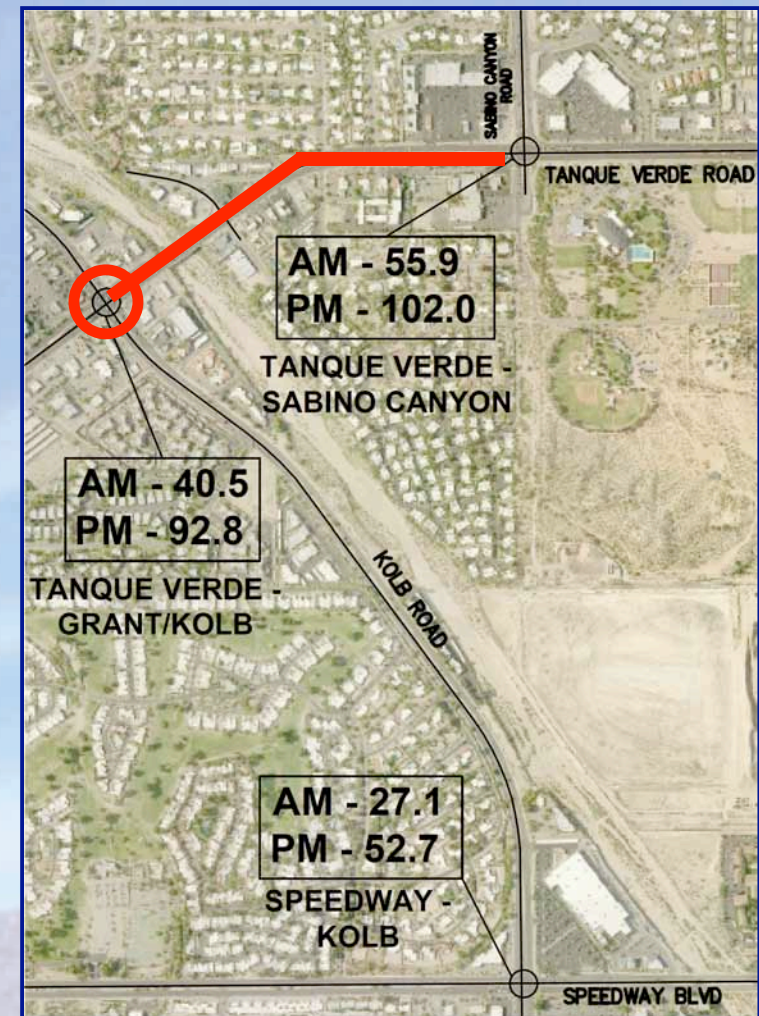


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## Existing Traffic Volumes

- Tanque Verde (Kolb-Sabino Cnyn): 2<sup>nd</sup> highest traffic volume in City
- Tanque Verde/Grant /Kolb
  - Worst LOS in City
  - Highest CO concentration in City
- 1,203 crashes in project area (2004-2008)
  - 1 fatal crash
  - 228 injury crashes



*Existing Delays (sec / veh)*



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## Existing Traffic Volumes

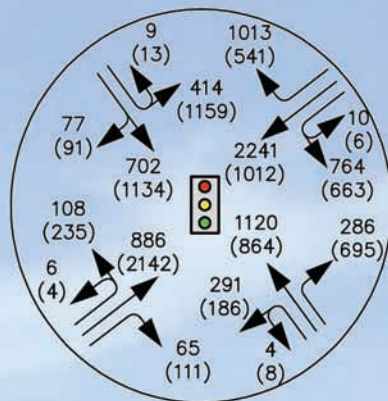




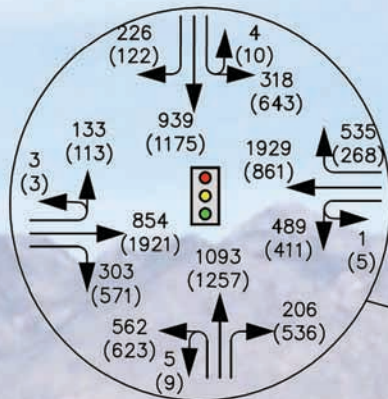
# KOLB RD.: CONNECTION TO SABINO CANYON



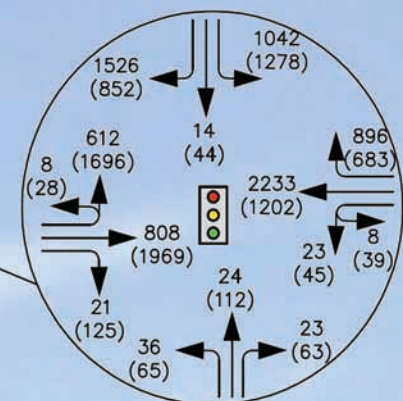
## 2030 Traffic Volumes without Project



TANQUE VERDE -  
GRANT/KOLB



SPEEDWAY -  
KOLB



TANQUE VERDE -  
SABINO CANYON



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## Delay Comparison (Existing vs. 2030 Without Project)

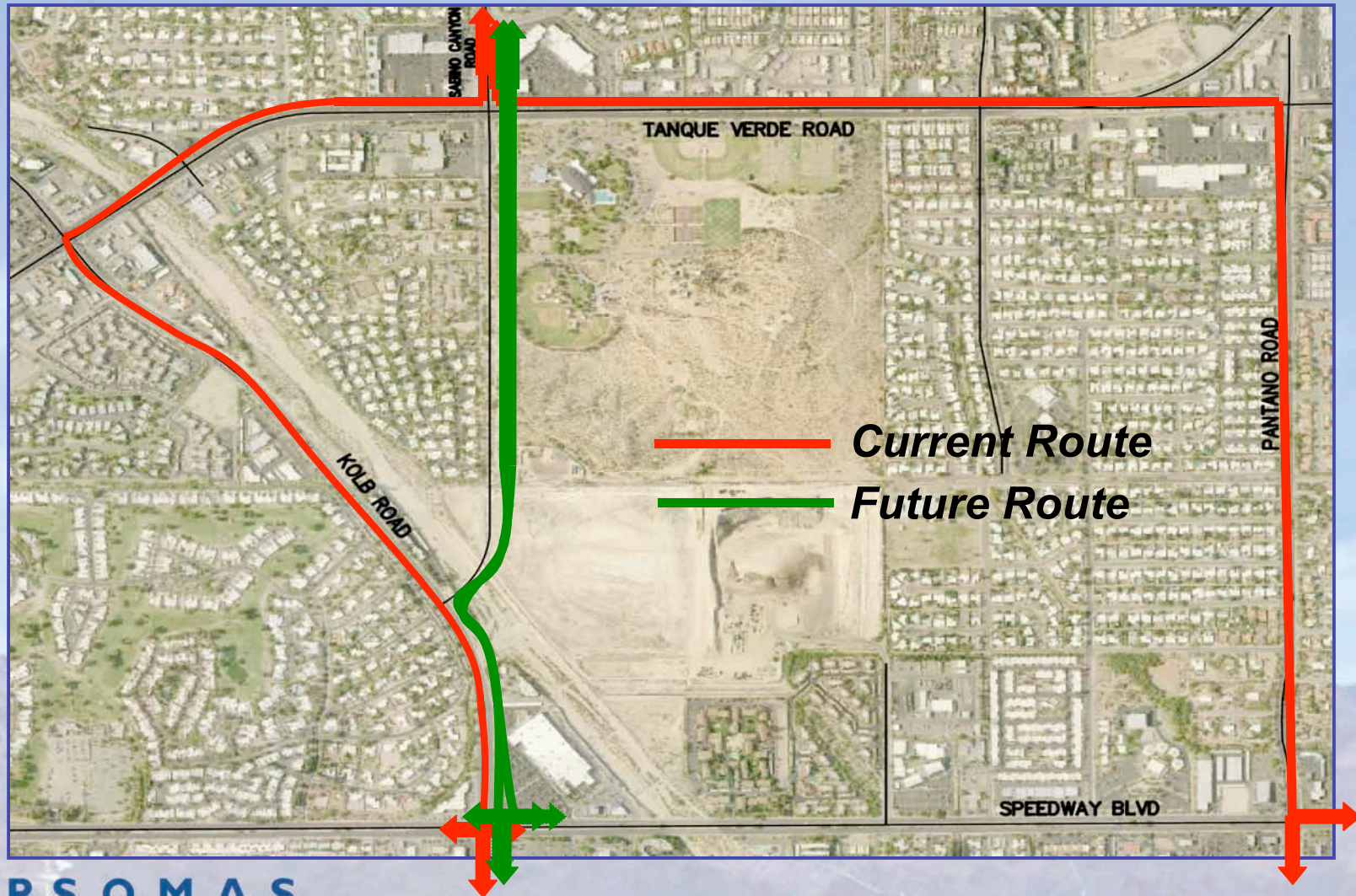
Intersection	2009 PM Delay (sec/veh)	2030 PM Delay (sec/veh)	Variation (sec/veh)
Tanque Verde Rd and Grant Rd/Kolb Rd	92.8	170.9	+78.1
Tanque Verde Rd and Sabino Canyon Rd	102.0	136.4	+34.4
Speedway Blvd and Kolb Road	52.7	97.0	+44.3



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## Changes in Travel Patterns with Project



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## Changes in Travel Patterns with Project

- Direct route to south
- Reduced traffic through Tanque Verde/Grant/Kolb
- Fewer left turns at Tanque Verde/Sabino Canyon
- Shorter emergency vehicle response times

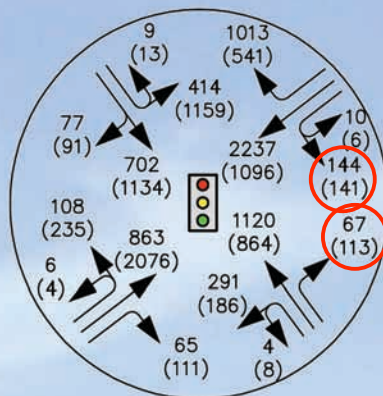




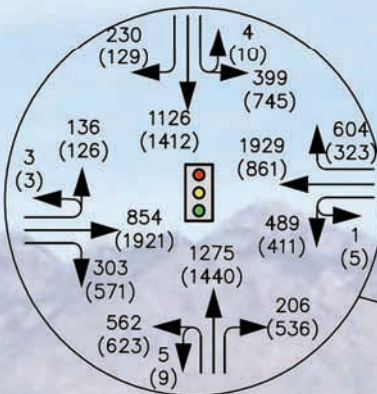
# KOLB RD.: CONNECTION TO SABINO CANYON



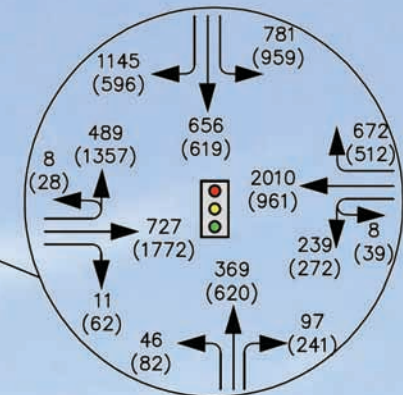
## 2030 Traffic Volumes with Project



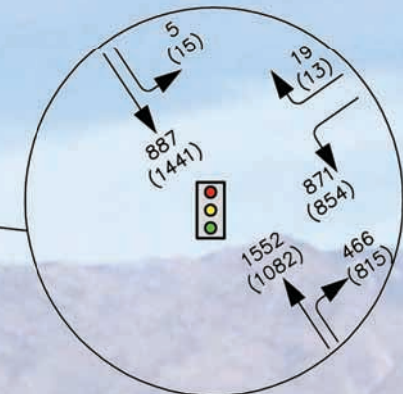
TANQUE VERDE -  
GRANT/KOLB



SPEEDWAY -  
KOLB



TANQUE VERDE -  
SABINO CANYON



KOLB -  
SABINO CANYON



### Daily Volume and Delay Comparison (2030 Without Project vs. 2030 With Project)



Intersection	2030 Delay per veh		Variation (sec/veh)	% Change
	Without Project	With Project		
T. Verde/Grant Rd/Kolb	+171	+79	-92	-54%
T. Verde/ Sabino Canyon	+136	+110	-26	-19%
Speedway/Kolb	+97	+115	+18	+18%
Sabino Canyon/Kolb (NEW)	N/A	+11	N/A	

- Reduction of 200 hrs of delay each peak hr of each day
- Improved safety through design and reduced delays



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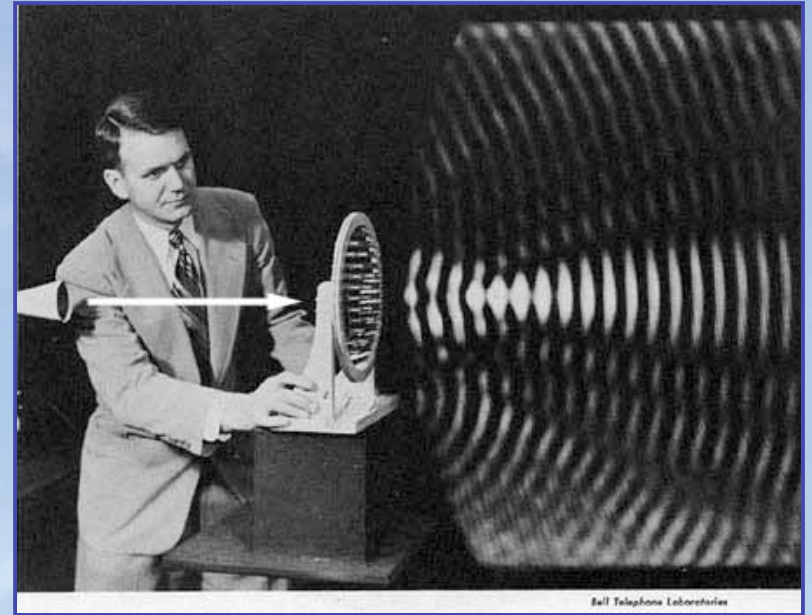
## Traffic Noise – Scott Stapp

- Outline
  - What is noise?
  - How noise is measured
  - Noise Abatement Criteria (NAC)
  - How noise is evaluated on a road project
  - When and how traffic noise is mitigated

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## What is noise?

- Unwanted sound
- Sound is wave energy
- Measured in decibels
- Filtered for human frequencies
- Measured in hourly equivalent



Leq (h) dBA

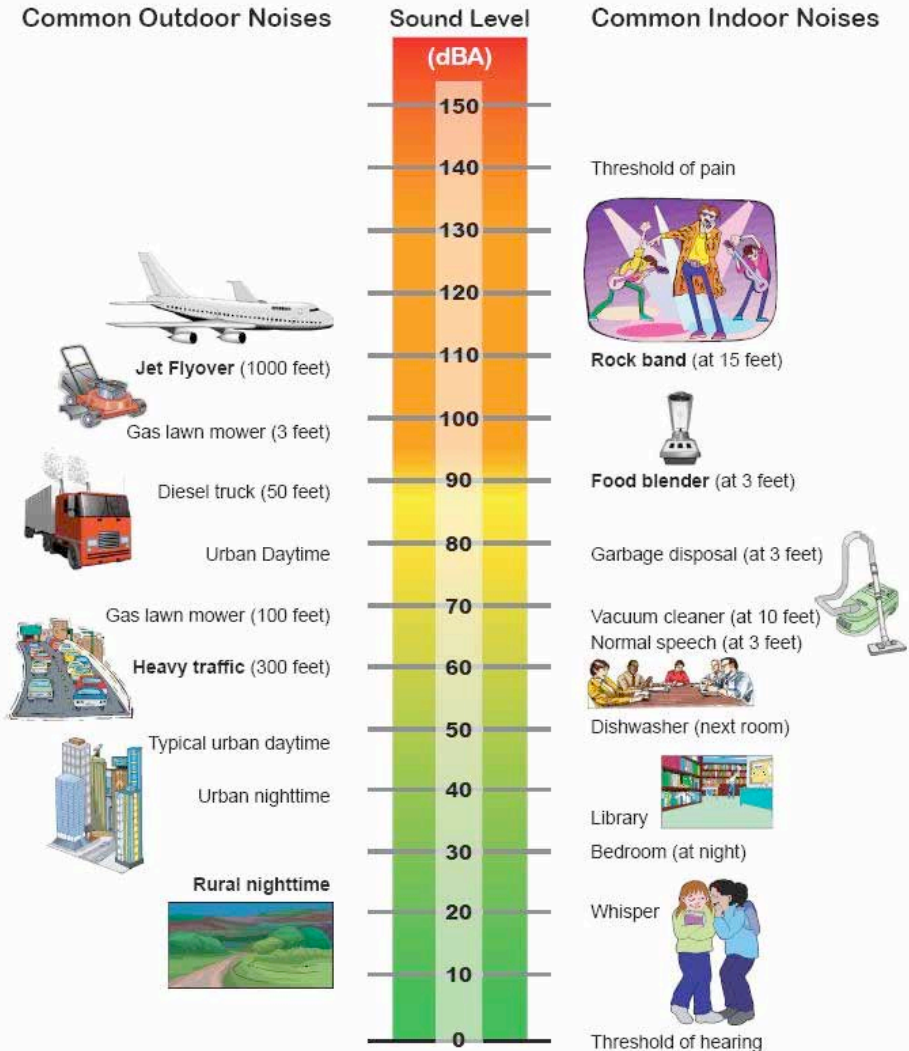


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## What is noise?

- Logarithmic scale
  - 0 dBA to 140 dBA
  - 10 dBA increase = doubling of noise
- 3 dB rule
  - $60 \text{ dBA} + 60 \text{ dBA} = 63 \text{ dBA}$

## Common Indoor and Outdoor Noise Levels





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## Sources of Noise

- Air conditioning units
- Pool pumps
- Barking dogs
- Sports facilities





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## Sources of Noise

- Transportation
  - Aircraft
  - Automobiles and trucks
  - Trains





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## Noise Abatement Criteria

- Not health-based standards – NAAQS
- FHWA regulations state that mitigation must be considered when...
  - “Approach or exceed 67 dBA” – ADOT 64 dBA
  - “Substantially exceed existing” – ADOT 15 dBA



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## How Noise is Evaluated on a Highway Project

- Ambient monitoring is used to check the model

Monitoring does not determine if noise mitigation is warranted



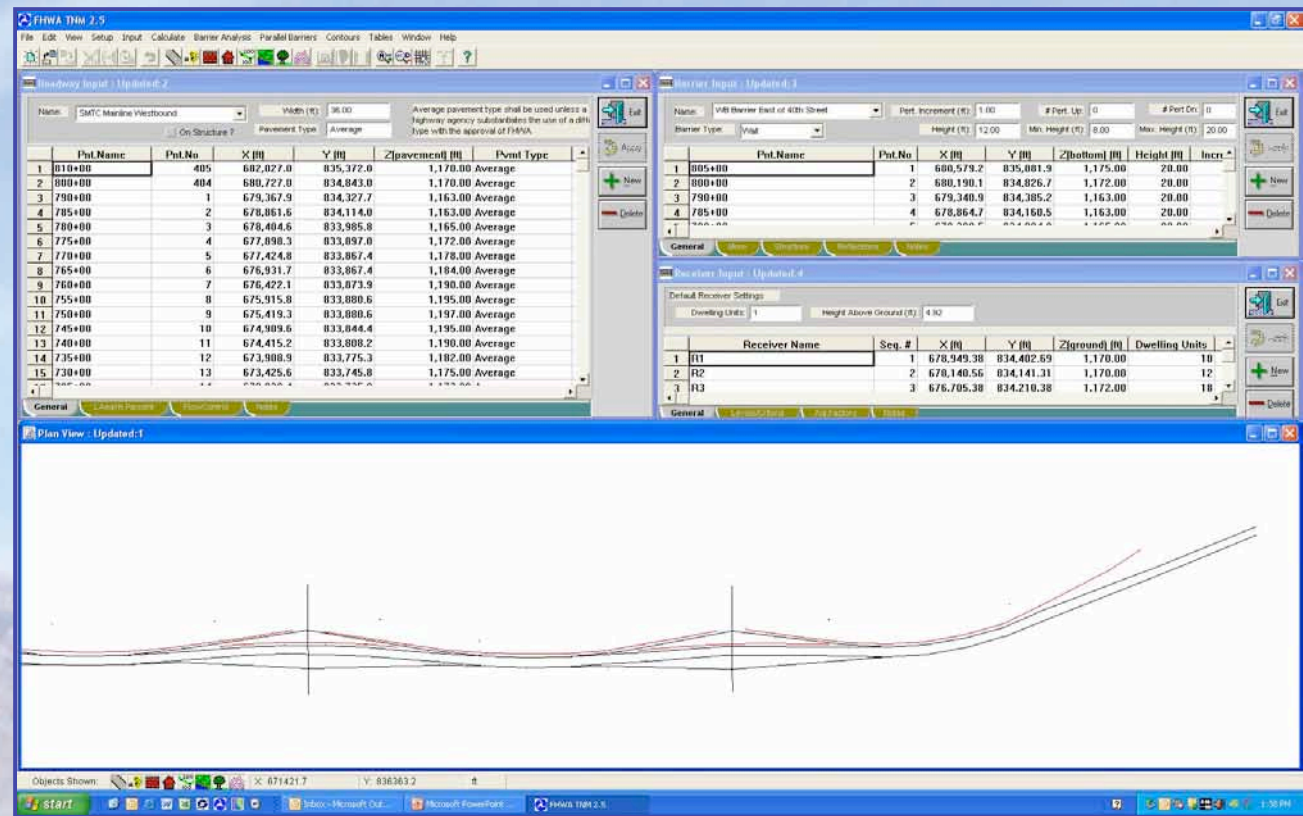


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## How Noise is Evaluated on a Highway Project

- Traffic Noise Model<sup>®</sup>
  - Existing
  - Future





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## Why Model Instead of Monitor?

- Too many places to monitor
- No improvements in place – no road
- Mitigation is based on the future conditions (2030)

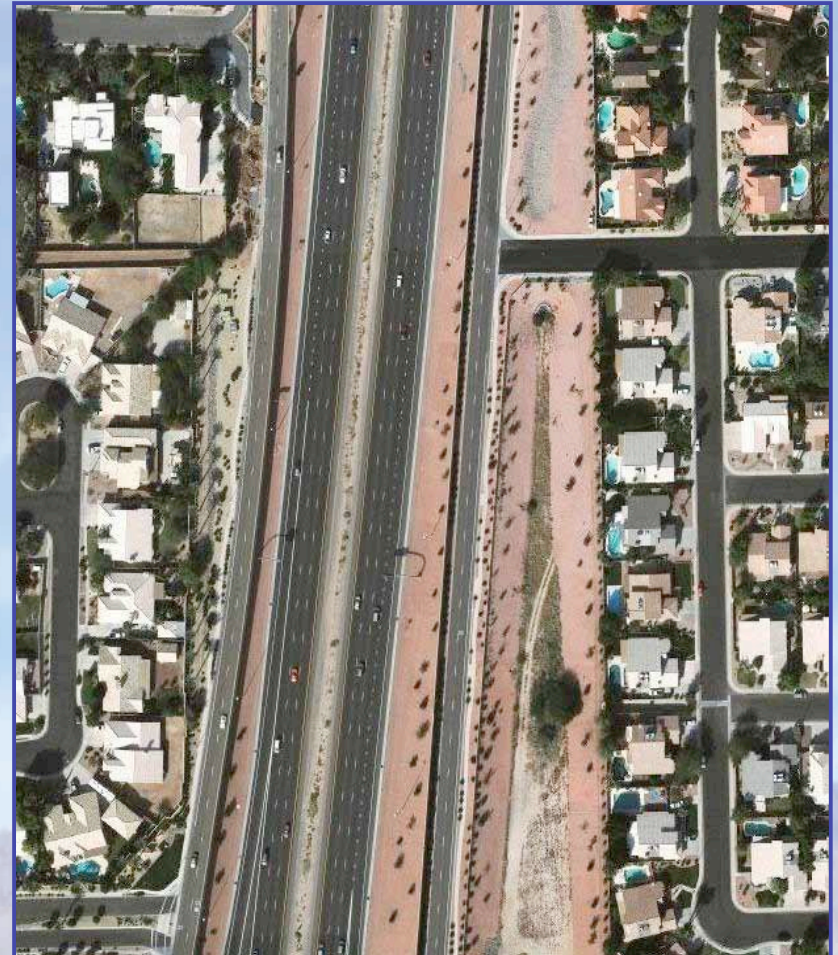


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## Factors that Affect Traffic Noise

- Traffic volume
- Trucks
- Speed
- Roadway characteristics
- Terrain
- Receiver locations



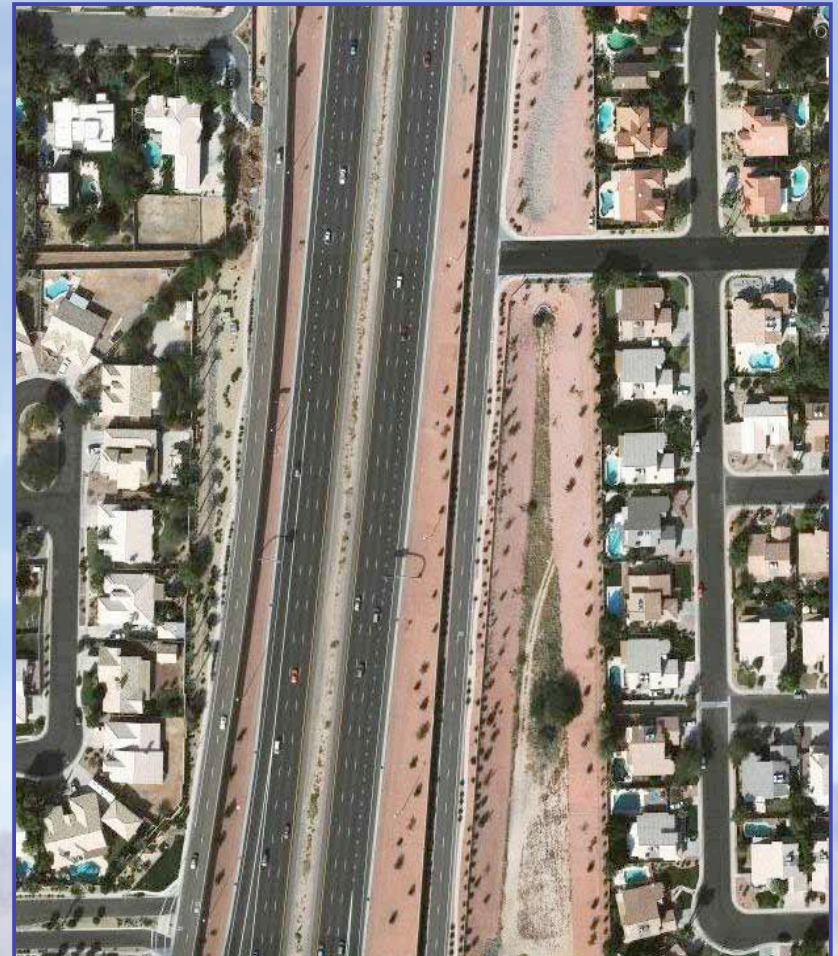


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**Noise abatement must be considered when NAC are met**

- Must meet tests
  - Feasible
  - Reasonable



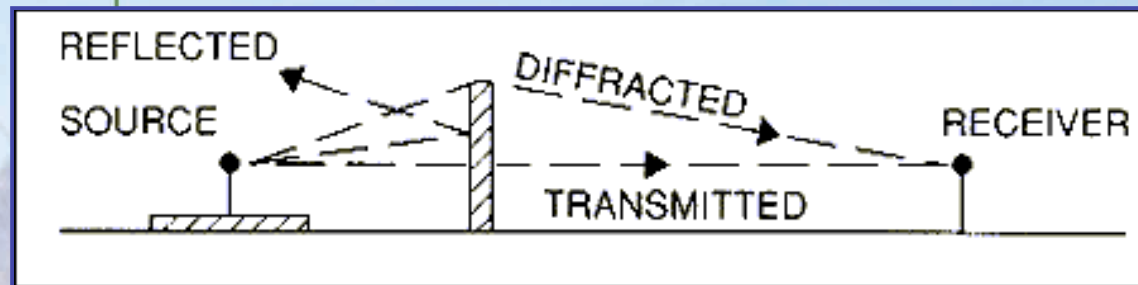


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## How Can Traffic Noise be Mitigated?

- Source reductions, receiver control, path reductions, horizontal or vertical alignment changes, traffic, additional right-of-way
- Rubberized asphalt (“quiet pavement”)
- Noise barriers





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## Mitigation Tests

- Mitigation must be feasible (engineering concerns)
  - Utility conflicts
  - Drainage issues
  - Safety and clear zone issues
  - Other noise sources present
  - Breaks in wall



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## Mitigation Tests

- Mitigation must be reasonable
  - Noise reduction provided (5 dBA and 64 dBA)
  - Cost per benefited residence (\$46,000)
  - Preference of residents



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## Next Steps – Michael Graham



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**THANK YOU FOR  
YOUR  
PARTICIPATION!**

<http://www.tucsonaz.gov/kolbsabinoconnection>



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